



Département territoires,
environnement et acteurs
Cirad-tera

**ASSISTANCE TO THE COLLABORATIVE
PROGRAM ON THE PARTICIPATORY
IRRIGATION MANAGEMENT IN HVIP,
NIGERIA**

**FARMING SYSTEM ANALYSIS IN THE
IRRIGATED AREA**

TRIP REPORT
From 10th to 25th of June 2001

Guy FAURE

CIRAD-TERA N° 52 /2001



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SUMMARY :

In relationship with NAERLS (National Agricultural Extension Research and Liaison Service) a methodology has been set up for analysing the farmers' strategies (sampling, questionnaire, data analysis). This methodology is based on a qualitative approach, which gives further information related to the cropping systems managed by the farmers.

The first surveys conducted on the field partially explain why the farmers do not cultivate a large part of the irrigated area during the dry season (absentee farmers, priorities given to the fadama areas,...).

In relationship with the French embassy a project has been identified dealing with farming system improvement. The project aims to strengthen the farmers' organisations capacities for promoting and managing better access to services (inputs, credit, processing, marketing,...). An experimental approach will be tested in some pilot sites in the irrigated area, cotton zone, groundnut zone and fadama area. Some studies dealing with farming system analysis and economic setting will be carried out. The results will be used to launch a national debate on role of the farmers' organisations in the rural development sector.

PLANNING OF THE MISSION

10/06 : Departure from Montpellier (France)

11/06 : Trip from London to Abuja

12/06 : Meeting in the French embassy (MM Guy Christophe and Gilles Carasso), meetings with world bank (L. Akapa), CEDEAO (A. Sawadogo) and DFID (A. de Jode)

13/06 : Meeting with the Director of the Federal Ministry of Agriculture (O.A. Edache), departure to Djalingo (Taraba state)

14/06 : Meetings with State Ministry of Agriculture, farmers' organisations around Djalingo, visit of farms, departure to Bauchi (Bauchi state)

15/06 : Meetings with the Secretary to the State Government (M.N. Umar), Bauchi State Agricultural Development Program, Visit of farms and women association in Jakiri.

16/06 : Visits of farms (groundnut and sorghum/millet producers, cotton producers) and one women association in Bauchi State.

17/06 : Meeting with NAERLS (SS Abubakar)

18/06 : Meeting with Institute of Agricultural Research (Director : Prof JP Voh), staff of KRIP in Kano, one Water User Association in KRIP

19/06 : Meeting with Bec-Frères in Kano, staff of HVIP in Hadejia, Water Users Association in Gamsarka

20/06 : Interview of one farmer (Gamsarka), visit of the market Dakaiyawa, meeting with one fadama association (Gatafa)

21/06 : Interview of herders (Marina) and fishermen, presentation of the base line survey results to HVIP staff, meeting with the federation of the WUA.

22/06 : Meeting with HJRBDA in Kano with the manager director participation, with the cotton association of Karae (Kano state)

23/06 : Meeting with NAERLS (SS Abubakar), the cotton association of Daoudawa.

24/06 : Final meeting with the research team of NAERLS

1 Objectives of the mission

The objectives of the mission are :

- Discussion related to the analysis and results of the baseline survey in HVIP (Hadejia Valley Irrigation Project)
- Support in the conception and implementation of the thematic survey in HVIP
- Participate and support in the conception of the baseline survey in KRIP (Kano River Irrigation Project)
- Finalisation of PhD study on marketing of perishable produce from HVIP and KRIP
- Identification of a rural development project on behalf of the French embassy

2 General comments related to the Information System in HVIP

The information system of HVIP dealing with the collaborative program includes :

- The data base and GIS managed by computer
- The base-line survey and the thematic survey
- The qualitative survey

Different objectives are related to this information system :

- The seasonal monitoring and evaluation of the performance of the irrigation system
- The decision making in the maintenance of the irrigation and drainage system
- The analysis of irrigation-related issues in agriculture

At this stage the information system is operational and provides relevant information. But the data collection is costly and time consuming. There is a need for improving the efficiency of the information system especially when KRIP is going to set its own information system. The information system would gain in efficiency if the research team and the different stakeholders were able to define in a very precise way their real needs in terms of information.

Based on some observations on the field and discussions with WUAs, HVIP and NAERLS, we can propose a framework for a further analysis by the research team.

For the WUAs :

There is a need for

- detailed maps at the sector level (i) to establish the maintenance program of the different district/field channels and drains, (ii) to identify a concentrated area for cultivation during the dry season,
- information on the product prices throughout the region and in Kano

Some questions are raised :

- Do we need to identify every season all the breaches along the channels? every three years ? If the WUAs or HVIP do not use updated information, an annual data collection is unnecessary.
- The data collection related to the prices will start very soon. Are we sure that this information will be available for the farmers at the right time ? To address this issue it will

be useful to disseminate the information through the federation and the WUA without waiting the computer-processing phase.

For HVIP :

There is a need for :

- detailed maps at the sector level to work with the WUAs
- detailed maps at the irrigated scheme level to assess the maintenance program for the main channel and main drain.
- an evaluation of the discharge through the different channels assessing the areas under cultivation and the cropping ratio during the dry season and the wet season

Some questions are raised :

Do we need measurement each season ? each year ? every 3 years ?

For HJRBDA :

There is a need for an annual report (statistics).

3 Base line survey and thematic survey

The NAERLS team has produced a report on the survey carried out in 1999 on approximately 200 farms. This report has been presented to HVIP staff during the mission. It provides precise situations of the farms, which cultivate in the irrigated area.

Some comments have been made to improve the quality of the document. Especially the data must be showed by sector.

M. Ilu is responsible to elaborate a new report, which will include all the remarks made by HVIP staff and by the mission. This report will be available in September 2001 and will be disseminated (HVIP, federation of WUA, HJRBDA, federal ministry of water, NAERLS, CIRAD, French embassy,...).

The questionnaire of thematic survey has been improved with the research team based on the results obtained with the base-line survey and based on the new orientations of the collaborative program. Especially, the economic analysis has been strengthened. A draft related to the new questionnaire has been written with the research team.

4 Qualitative farming system survey in HVIP

This survey is one of the different studies carried out about farming system ¹. It brings complementary information which are difficult to find in the base-line survey and the thematic survey. The qualitative survey has been planned with NAERLS staff during the previous mission of Marcel Kuper (2001). For this work there is no need for modification in the 2001 budget.

4.1 Objectives :

The objectives of the qualitative survey are :

- To understand the farmers' strategies related to access to irrigation in HVIP irrigated scheme and fadama area
- To characterise the relationships between up-land cropping system, fadama cropping system and irrigated cropping system
- To determine the farmers' practices in water management during the dry season and wet season
- To determine the interactions between individual strategies and collective strategies in the irrigated scheme and in the fadama area.

4.2 Methodology

The methodology must be applied at two levels : sector and farm level.

In each sector a rapid qualitative survey will be carried out with a small group of farmers and leaders of the WUA (an half day per sector). It will lead to a simple classification of the farmers related to their involvement in the irrigated area compared to the area under cultivation in the fadama or up-land areas or compared to the importance of different activities (cattle rearing, fishery, absentee farmers,...).

The questionnaire at sector level is given in annexe 1. It has been partially tested in one village (Gamsarka). The research team can improve this questionnaire.

For each sector one farmer per category will be interviewed. Only the main categories of farmers will be taken into account. 4 to 5 farmers will be interviewed per sector. Absentee farmers must be interviewed as well even if they are located in Kano, Kaduna or Zaria².

The total amount of qualitative surveys will rank from 32 to 40.

The questionnaire at farm level is given in annexe 2. It has been tested in two situations (one farmer in Gamsarka and one herder in Marina). The questionnaire is a guide, which allowed the researcher to identify new questions depending on the answers of the farmer. It's an open questionnaire.

¹ In HVIP, there is one base line survey which determine the main characteristics of the households and one thematic survey which is more or less an update three years later of the previous survey.

² In Marina sector, about 70 % of the irrigated land are cultivated by absentee farmers during the wet season ; such people are not interested in cultivating during the dry season.

Two hours are required for one interview. If a translator participates in the process the time per interview could increase especially at the beginning of the survey.

4.3 Data analysis

4.3.1 For each survey

After each survey, an analysis is needed. The analysis framework is provided for the case of the Gamsarka's farmer.

Characteristics of the population :

Size of the family: 24 (3 wives)

Number of people who work in the fields 5 (all males)

Number of people who own a field and cultivate it: 1 (brother)

Equipment and rearing :

Number of oxen for animal traction: 2

Number of cattle: 0

Do you have a personal pump: 1 (water source: pond and river stream; pump doesn't work this year)

Do you have an access to a pump: --

Sole (acre)

	Fadama	Irrigated	Up-land
Wet season	8 maize	4 rice	1 millet+cowpea
Dry season	7 wheat 1 onion and lettuce	1 maize	0
Total	8	4	1

Conclusion : involvement more important in the fadama but very depending of the pump availability; he rents land in fadama (0.4 acre last dry season).

Labour organisation :

	Fadama	Irrigated	Up-land
Wet season	First; very soon if pump available otherwise at the beginning of the rain	After fadama work and depending on the water availability in the field channel	At the beginning of the rain
Dry season	First if pump available	after rice harvest and fadama work	--
Performance	Better yield, less fertiliser, risky (pump availability and flood arrival)	Land preparation more flexible, cheaper (no fuel)	Very important for food, low yield

Conclusion : cultivation in the fadama area is more complex and more risky but the farmer expects higher yields and better incomes.

Access to inputs, labour and tractor

There is labour shortage (wives do not work in the field); each season the farmer wants to hire a tractor (for land preparation especially in fadama : ploughing, ridge earth, water ways,...) but access to tractor is costly and hazardous.

The rice is sold to pay fertiliser, tractor hiring and sorghum/millet for family food. Millet and sorghum cannot be cultivated during the dry season because of the birds' attacks.

Water management

	Fadama	Irrigated
Wet season	Maize : weekly irrigation before the rain ; irrigation depending on the demand during the rainy season ; harvest before the flood	Rice : nursery during the dry season (irrigation : twice a week); transplanting at the beginning of the rainy season (irrigation depending on the demand)
Dry season	Wheat : planting after flood removal and when temperature is low ; irrigation twice a month during 3 months	Maize : irrigation depending on the demand
Water shortage	No	No
Water logging	No, except flood	Yes, but not very important

Conclusions : cultivation in the fadama is very depending on different conditions: pump availability, date of the flood arrival (the farmer can use bags to delay the flood arrival), importance of the flood (deep flood implies less irrigation during the wet season)

4.3.2 Farm classification and final report

After the analysis of each farm, a classification will be elaborated. The criterias, which will be used for the classification, will be determined after the analysis of each case. The classification will provide an understanding of the relationships between the different cropping systems (fadama, irrigated, up-land) depending on the type of the farm (size of the farm, more or less involvement in the fadama or in the irrigated area, more or less involvement in the cattle rearing, absentee farmer,...).

A final report will be written which will present the farm classification and the main farmers' strategies.

4.4 Planning

M. Ilu (NAERLS) is responsible for the farming system component of the joint program (base line-survey, thematic survey, qualitative survey). Under his supervision, S. Balmisse will be responsible for the qualitative survey (work plan, monitoring of the field work, final report organisation, coordination of the final report writing).

The qualitative survey will be undertaken during the wet season 2001.

The field-work will be realised by the all research team involved in the farming system component. The qualitative surveys will be directly conducted by the researchers and not by some investigators.

The final report will be available at the end of the year 2001.

5 THE PROJECT IN THE FUTURE

The collaborative program will continue the next years and will be involved into a broader project.

A project proposal is given in annex 3.

This project could start in 2002. If there is a delay in the implementation of the new project, the French embassy will analyse a proposal for one more year intervention in HVIP and KRIP based on the same main objectives of the current project.

ANNEXE 1
QUESTIONNAIRE “QUALITATIVE ANALYSIS, SECTOR LEVEL”

Do all the farmers of the village have access to the irrigated area ?

A majority ? A minority ?

What are the main problems dealing with the irrigated area ? (water shortage, waterlogging, organisation of the maintenance of the field channel or drain, maintenance of the district channel or drain,...)

Do the farmers have access to the fadama ?

A majority ? A minority ?

Is the fadama area larger or smaller than the irrigated area ?

Do the farmers have access to pump in the fadama ? In which proportion ?

Are they absentee farmers ? In which proportion ? How did they get access to the land ?

Are they herders ? In which proportion ?

Are they fishermen ? In which proportion ?

ANNEXE 2
QUESTIONNAIRE “QUALITATIVE ANALYSIS , FARMER LEVEL”

Characteristics of the population :

Size of the family :

Number of people who work in the fields :

Number of people who owns a field and cultivate it :

Equipment and rearing :

Number of oxen for animal traction :

Number of cattle :

Do you have a personal pump ?

Do you have an access to a pump ?

Sole :

What is the area per crop in the irrigated system?

Dry season: 2000/2001

Wet season : 2001

What is the area per crop in the fadama area?

Dry season : 2000/2001

Wet season : 2001

What is the area per crop in the up-land area ?

Wet season : 2001

What are the area independently cultivated by the wives ?

What are the area independently cultivated by the children ?

Access to the land

How do you get the land in the irrigated/fadama area ?

How long do you cultivate in the irrigated/fadama area ?

Do you pay or give anything for the land ?

Do you rent some land to anybody ?

Varieties

Do you use different varieties of rice³ in the fadama area ? in the irrigated area ?

Which varieties ? Why ?

Do you use different varieties of tomato⁴ in the fadama area ? in the irrigated area ?

Which varieties ? Why ?

³ Farmers can use old rice varieties in the fadama area (swamp rice, floating rice, low land rice) ; some of them have already disappeared when new varieties arrived ; Farmers use different varieties of rice in the irrigated area (irrigated rice, low land rice).

⁴ Farmers can use different tomato varieties in the irrigated area and in the fadama area ; the characteristics are different (size of the tomato, duration of the preservation, market price,...)

Cattle rearing (for fulani people)

When do you live the sector with your cattle ?

After sowing crops and transplanting rice ?

When do you come back with your cattle ?

Before harvesting ?

Performances of the cropping system

During the dry season, do you install first the crops in the fadama area or in the irrigated area

Which crops first ? Why ? Is it the same every year ?

During the wet season, do you install first the crops in the fadama area or the irrigated area or in the rainfed area ?

Which crops ? Why ? How do you manage the flood arrival ?

Is it the same every year ?

In which area (fadama/irrigated) do you get a better yield during the dry season ?

Rice, oignons, tomato ? Why ?

In which area (fadama/irrigated/rainfed) do you get a better yield during the wet season ?

Which crops ? Why ?

In which area do you earn more money ?

Usually, do you buy grain for your family food because your production is low?

Access to inputs, labour and tractor

Do you use fertilizer ?

If yes, how do you get it ?

Do you hire tractor ?

If yes, is it easy to hire a tractor ? Are you able to hire a tractor each year ?

Do you hire labour ?

If yes, for which works and which periods ?

With which products do you pay these expenses (rice, vegetable, cattle,...) ?

The farmer's project

In the future do you plan to extend/diminish your surface

in the fadama area ?

in the irrigated area ?

in the up-land area

For you, is it easy to have an access to the land ? Why ?

In the fadama area ?

In the irrigated area ?

In the up-land area ?

Water management practices

In the fadama area :

During the dry season 2000/2001

Per crop : What are the schedule of the irrigation ?

Did you experienced shortage of water ? Why ?

During the wet season 2001

Per crop : What are the schedule of irrigation ?

Did you experienced shortage of water ? Why ?

Did you experienced excess of water ? Why ?

In the irrigated area :

During the dry season 2000/2001

Per crop : What are the schedule of irrigation ?

Did you experienced shortage of water ? Why ?

Did you experienced excess of water ? Why ?

During the wet season 2000/2001

Per crop : What are the schedule of irrigation ?

Did you experienced shortage of water ? Why ?

Did you experienced excess of water ? Why ?

ANNEXE 3

TITLE: IMPROVING THE FARMERS' FARMING SYSTEMS AND PROMOTING FARMERS' ORGANISATIONS ACCESS TO SERVICES IN NIGERIA

1 Framework of the project :

1.1 Current situation

Northern Nigeria benefits from a large variability in terms of agrarian system. Rainfed agriculture, with products such as cotton or groundnut is complemented by the irrigated agriculture, in the zones of "Fadamas", along the river benches and in the large scale public irrigation schemes.

At the federal level policies of the Federal Ministry of Agriculture aimed to alleviate poverty through the improvement of food security and the revitalization of efficient production of cash crops. The state Governments on the other hand appears to be withdrawing from providing direct support to the agricultural sector as well as from the provision of inputs to the farmers.

At the grassroots level, one can observe the emergence of a dynamic private sector through the progressive organisation of farmers. This is especially observable across the Middle Belt and Northern Nigeria in the fadama areas, the public irrigation schemes and some cash crops production zone (e.g. cotton, groundnut, ...).

In this context farmers' organisations require new services to improve their production (rice, sorghum, groundnut, cotton, vegetables,...) as well as to get a better access to inputs and credit and eventually to obtain better market opportunities.

Since 1995 the French Embassy has been assisting the NAERLS to promote the Participatory method for the management of the public irrigation system (i.e. the Hadejia Valley Irrigation Project in Jigawa State). Different stakeholders are involved in the process: i.e Hadejia Valley Irrigation Project; Hadejia Jama'are River Basin Development Authority; farmers' organisations and the CIRAD (Centre de cooperation Internationale en Recherche Agronomique pour le Développement) who provided technical support.

The results so far are promising: the strengthening of 8 Water Users Associations (WUAs) has been promoted to improve the farmers' participation in the maintenance of the irrigation scheme and negotiate with the public agency (i.e. Hadejia Valley Irrigation Project) better conditions for water delivery and maintenance of the infrastructures. To effectively face the challenges ahead, the farmers decided to create their own federation with well developed and diversified activities (e.g. credit delivery for the members, financing of social infrastructures,...). An information system has been designed and used to help the project in monitoring its activities, assessing the results and involving the farmers in decision making. A national workshop on Participatory Irrigation Management (PIM) organized by NAERLS and the Federal Ministry of Water Resources has given the opportunity to share the experience of the program and has brought the concept of PIM in the agenda of the policy makers in Nigeria. Based on these successes, NAERLS has been directed by the Federal Ministry of Water Resources to support all RBDAs in their efforts to comply with the policy directive of implementing the new concept base on the HVIP experience.

The goal of this proposal is to provide a framework for the expansion of this experience as well as on the improvement of the existing farming systems and the supportive participatory extension approaches in order to provide more efficient and cost effective agricultural services to farmers in the country.

1.2 Interventions of others financial institutions

Others international financial institutions intervene in the field of rural development.

The World Bank will implement a project called "Fadama 2" which will assist ADP's and farmers' organisations in the irrigated areas (loans for pumps and tube-wells, training,...).

The DFID assists some state governments in the field of poverty alleviation (Benoue, Jigawa,...).

The EU assisted farmers' organisations at the national level (capacity building).

1.3 Beneficiaries of the project

The small holders will benefit of the project by improving their productions and by getting better access to services.

The extension services and the water agencies will benefit of the project : better efficiency, training of the staff.

The research institutions will be strengthened : access to means for the functioning, training,...

2 Project presentation

2.1 Goals of the project

The goal of the project is aimed at alleviating the poverty by increasing the food security and increasing the incomes of the farmers trough the promotion of different cash crops.

2.2 Main Objectives

The main objective of the project include amongst others the following:

- Improve access to services for the farmers and farmers' organisations
- Strengthening the 's organisations and field agencies
- Strengthening the research institutions specialised in different farming systems, extension and co-operatives
- Capacity building of national expertise towards sustainable development

2.3 Specific objectives

The specific objectives of the project are as follows:

- Design and application of methods and tools for strengthening farmers' organisations for better access to support services
- Improving knowledge on the farming system and markets for the different stakeholders for:
 - Understanding farmers' strategies and practices
 - Characterization of marketing operation (chains, function, & channels)
- Providing decision making tools to farmers' organisations, field agencies and policy makers for promoting and monitoring new approaches
- Providing a framework at local, state and national levels for sharing of the results and experiences of the project.

2.4 Targeted area

The project will focus on different areas aiming at addressing the most critical issues that northern Nigeria faces and aiming at improving the production, processing and marketing of strategic crops which form part of the main priorities of federal government.

The targeted areas are :

- **The irrigated area** : the project will focus on HVIP (Jigawa state) and KRIP (Kano state) where the first actions of the joint program NAERLS/HJRBDA/CIRAD started
- **The cotton based cropping system area** : the project will focus on one pilot site in Katsina state
- **The groundnut/Sorghum based cropping system area** : the project will focus on one pilot site in Kano state
- **The fadama area**: the project will focus on one pilot site in Bauchi state.

The choice of the targeted area must be confirmed following different criteria :

- Existence of strong and viable farmers' associations at the grass-root level (village level or more likely union)
- Interest and capacity of the local government and the field agencies to strengthen the farmers' associations

The needs of the farmers and farmers' organisations have to be identified depending on the area and the commodities.

2.5 Project activities

2.5.1 Strengthening farmers' organisations

- The project will have to characterise the farmers' associations to understand the level of organisation and the results already achieved.
- The project will assist the farmers' associations to start an internal diagnosis by the members and to draw-up an action plan depending of the needs of the farmers' associations and the level of priorities of the different actions which has been planned
- The project will facilitate the implementation of the action plans by the farmers using their resources and capabilities

2.5.2 Promoting services centres managed by farmers' organisations

NAERLS in collaboration with the relevant field agencies and the farmers will assess the resources needed to achieve this objective.

The project could assist the farmers' organisation to address different questions such as:

- Improve access to the inputs
- Negotiation with credit institutions
- Improve access to the market
- Improve the cropping and rearing system based on exchanges of experiences between farmers

Depending of the level of maturity of the farmers' associations the feasibility of a support service center will be assessed. It will be located beside the farmer's associations and managed by a board composed with farmers to plan, monitor and assess the support service center. The farmers will finance partially the support services centers.

2.5.3 Studies on farming systems and market analysis

Aiming to have a better understanding of the strategies and practices of the farmers and traders and to get a better situation of the market opportunities different studies will be carried out. NAERLS, IAR and different universities will participate in these studies. French Research Institutions (to be led by CIRAD) which have experience in this field would also participate. A special attention will be paid in assisting Nigerian Ph.D. studies. By this way the national capacity will be improved.

2.5.4 Designing information system

- Aiming to help farmers' associations, HVIP and HJRBDA to monitor the irrigated scheme (operation and maintenance) the current system information will be improved and extended to KRIP.
- For the fadama and upland intervention sites, the project intend to define the information needs by the farmers' organisations and field agencies to improve the strategies and practices of the various categories of farmers. In the pilot site, we could assume that GIS at local state government will be an opportunity for addressing the questions.

2.5.5 Dissemination of results

- The project plans to share the experience gain with all interested stakeholders at local, state, national and international levels. This could be through farmer's field days, study tours and workshops. Print and electronic media such as reports, proceedings, journals articles, video films, radio & TV programs shall be used for this purpose.
- A scientific seminar will summarize at the end of the project the main results of the project.
-

3 Feasibility of the project

The successful execution of the project depends on the following issues:

- Technical issues
 - Farmers' organisations (whether the farmer organisation are valuable and financially viable)
 - Manpower (whether the quality and quantity of human resources involve in the execution of the project is adequate enough)
 - Facility (whether these are available and functional)
- Economic issues
 - Economic issues (whether the inputs to be injected in the project are affordable and realistic and the benefits expected, as a result of the project would have impact on the beneficiaries)
- Project management
 - Logical framework (whether the time frame for the implementation of the project is realistic)
 - Monitoring & evaluation mechanism in-built in the project is adequate and flexible
- Risks
 - Operational (whether the activities of the project can be sustain by the farmers' organisations after the completion of the project)
 - Political and administrative (whether the political environment is conducive to promote the ideas of the projects elsewhere)

4 Evaluation of the means

4.1 Budge

The budget of the project will be 7 millions of French francs.

Investment: 1 million

Functioning: 3 millions

Training and studies: 1 millions

Technical assistance: 2 million

Duration of the project : 3 years.

4.2 Project governance

4.2.1 Steering committee

Depending on the structure of the project, a steering committee could be set up to adopt the annual program and budget of the project. Farmers' organisations, field's agencies, federal ministry, NAERLS, CIRAD and Fench embassy could be involved in this committee.

Relationship will be established with DFID in Jigawa state which is one of the state chosen by DFID for its interventions.

4.2.2 Roles of the identified partners

The following partners have been identified for the implementation of the project.

4.2.2.1 Farmers' organisations: As the main beneficiaries and clients

The expected roles of the farmers' organisations will include :

- The provision of platforms for the execution of the project activities.
- The providing of the counterpart contribution to the execution of the project
- Management of the service centers

4.2.2.2 RBDAs, ADPs, Local Government.

The roles of these different partners must be clarified.

RBDA will participate in the definition of the annual work plan and will provide technical assistance to the irrigated project (HVIP and KRIP).

ADPs will participate in the definition of the annual work plan in the rainfed and fadama areas. They will assist farmers' organisations in their different activities scheduled in the project.

Some local government are involved in ADP's activities. They will participate in the following of the project in the pilot sites and could assist the service centers.

4.2.2.3 NAERLS ABU- Zaria and others research institutions

The expected roles of NAERLS will include;

- Participate in the formulation of the project
- Provision of technical support, capacity building and strengthening of farmers' organisations, field staffs of Agricultural Development Projects (ADPs), local governments, River Basin Development Authorities (RBDAs) and other stakeholders
- Identify and define the roles of other research institutes involved in the implementation of the entire project

- Monitoring and evaluation of on-sites activities

Different universities (ABU, state universities) and IAR could provide students and assistance to carry out some studies (farming systems, common chain analysis, institutional framework,...).

RECTAS will provide technical assistance in GIS when there is a need in this field.

4.2.2.4 CIRAD

The expected roles will include;

- Definition and formulation of the project in consultation with other partners
- Provision of technical support, capacity building and strengthening of partners (i.e. research institutes and field agencies)
- Monitoring and evaluation of the entire project

5 Schedule of the project designing

The project report will be written by the french embassy in relationships with :

- the stakeholders of Nigeria involved in the proposal : federal ministry of agriculture, ADP's of different states, HJRBDA and NAERSL.
- The stakeholders of the french cooperation : CIRAD
- Others financial institutions : DFID

The schedule is :

FPC : july 2001

Project preparation with one mission : august to october 2001

Project presentation report : november 2001

Comité directeur :

Beginning of the project : february 2002

**ANNEXE 4 : THE NIGERIAN AGRICULTURE AND THE CONTEXT OF THE NEW
PROJECT FUNDED BY THE FRENCH EMBASSY**

**BY SS ABUBAKAR
DIRECTOR OF NAERLS**

THE NIGERIAN AGRICULTURE

Introduction

Agriculture in Nigeria is on the concurrent list in the constitution. This means that most of the activities in Agriculture is to be shouldered by the State Government. While the Federal Government plays coordinating and facilitatory role through policy formulation and implementation. The Local Governments are supposed also to take active role in the promotion of agriculture within their area of jurisdiction. The major facilitation required from Government in terms of policy are in the areas that;

- i) Support the development of innovations which are both appropriate and effective. They should, therefore, be both relevant and proven. This in effect, means support for research on development of improved varieties of crops or breeds of livestock and fisheries as well as development of improved practices in the production cycle, the storage of produce and their processing.

- ii) Facilitate relevant input availability, distribution and supply.
- iii) facilitate the availability of credit sources and insurance of farm produce for farmers.
- iv) Facilitate marketing of produce such as to minimise any adverse effect on the producers.

The State Governments on the other hand are to facilitate the availability of all relevant information and the physical availability of required inputs by farmers. This means;

- i) Putting in place an effective extension system.
- ii) Setting up the essential structure for effective distribution of required farm inputs and the marketing of the produce. This will include the building of essential rural infrastructures and ensuring the procurement of the inputs.

The Local Governments will perform similar functions as the State Governments within the limits of their resources and within the areas of their jurisdiction.

Basic requirements in the Nigerian Agriculture

The problem of the Nigerian agriculture is one of low productivity in terms of yield per unit area as well as the poor quality of some of the produce. In the area of livestock also the problems are similar. What need to be addressed are, therefore, the following;

- i) The issue of yield per unit (either of area, in respect crops or per animal in respect of livestock both for dairy and for meat).
- ii) The issue of quality of the produce or of the animal.

Both issues are those that can only be remedied by improved technology and practices. However, even with the availability of the appropriate technology there are attendant problems of input availability and marketing of the produce that have to also be addressed. Making relevant information available to the farmers can also be a very key problem that has to be addressed.

Any intervention that can achieve any tangible result within the shortest possible time has to target accurately the main areas

of problems and address them in the most comprehensive manner. This, therefore, requires a good articulation of the intervention programme such that it is both, all encompassing and practicable. The following approach is suggested.

- i) Specific areas of the country to be targeted;
- ii) A baseline survey to be undertaken to determine the situation of the farmers in that or those specific areas. A participatory approach to be used with the aim of obtaining qualitative rather than quantitative data. The survey should include the determination of what is available in the country, in terms of possible solutions to the problems of the farmers.
- iii) A solid programme of sensitization, enlightenment and eventually empowerment of the farmers to be undertaken. The farmers should lead the way with all the support they need (both technical and material) to identify their problems, solutions to the problems and their actual needs in terms of what will enable them overcome the problems.

- iv) All support interventions should be designed in such a manner that the required machinery to make the intervention work can be sustained by the empowered farmers using existing structures and facilities within their reach. So any donor support should play only a facilitatory role to make that happen.

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REPORT OF CIRAD COUNTRY MISSION ON FARMING SYSTEM LED BY Mr. GUY FAURE OF CIRAD-TERA (17TH-24TH JUNE 2001)

INTRODUCTION

This country mission is one of the five missions planned under the 2001 workplan of the collaborative program. Initially it was a 2-weeks mission (i.e. 10th –24th June 2001) but later changed to one week to provide time for other important activities outside the program.

The mission team under the leadership of Mr. Guy Faure comprised of Project Coordinator (S.Z. Abubakar), Farming System Module team leader (I.Y. Ilu), FTAC (Sebastien Balmissé), T.T. Amos and Abba Aminu (Ph.D Student on Marketing). Other mission member was the projector coordinator at H-JRBDA side (M.U. Kura). During the course of the mission the team draw other persons to achieve its objectives.

The objective of the mission is as *per annex 1*. Also provided is the schedule of activities observed during the mission. At the request of Mr. Guy Faure the mission identified two cotton growing communities in Kano (Karye LGA) and Katsina States (Daudawa LGA). A checklist was prepared by the farming system group for use during discussion with selected target groups *annex 2*. Below are the details on each of the activities carried out in the different days.

DAY ONE SUNDAY 17TH JUNE 2001

Mr. Guy Faure was accompanied by Mr. Guy Christophe of the French Embassy from Abuja to participate in the planning of the entire mission and meeting with NAERLS management. Details of the meeting are provided in *annex 3*.

DAY TWO MONDAY 18TH JUNE 2001

Mr. Guy Faure paid a visit to Institute for Agricultural Research (IAR) Samaru in the company of S.Z. Abubakar and S. Balmissé. The team had discussion with the Director and some relevant program leaders. The team leader informed the institute management of the interest the collaborative program between CIRAD, NAERLS, and H-JRBDA to involve them in the area of their competence. Mr. Guy Faure promised to continue the consultation with IAR especially now that a new project is being conceived around some of the mandate crops of the institute.

During the visit the team was briefed on the mandate of IAR in terms of crops and geographical spread. The Institute is responsible for genetic improvement of Cotton, G/nut, Sorghum, Maize, cowpea and some horticultural crops. Other key areas of activities mentioned were Farming System Research and Irrigation Research. Some publications on the institute activities were provided to the team for reference.

DAY THREE: TUESDAY THE 19TH JUNE 2001

i. Meeting with HVIP Management (11.35am – 2.30pm)

a. Issues Discussed

The mission team arrived to Hadejia around 11.15am and twenty minutes later the project manager was able to organize his staff to receive the mission team and discuss the itinerary of the team while in Hadejia. The Cirad Project Coordinator Mal. S.Z. Abubakar introduced the mission team leader Mr. Guy Faure and other members to the Project Management. The objective of the mission was clearly explained to the project manager and his staff by Mal. S.Z. Abubakar. The marketing study to be conducted in Jigawa State particularly the HVIP was also introduced and explained. The project manager in response to Mal. S.Z. Abubakar briefing also introduced himself and his staff to the mission team and expressed his gratitude and thanks to the team especially the leader of the mission team Mr. Guy Faure of the Cirad, France.

The discussion focused on the direct links existing between the WUAs and the agency. The facilitators therefore introduced themselves, the sector they cover and highlighted the activities they conducted with the farmers, problems they encountered in the process of facilitation and their future plan with their farmers. Mr. Guy Faure also introduced his mission to them and emphasized the interest in the participatory methods used for problem and solution identification.

At the end of the meeting the project manager (HVIP) sent his staffs to the various sectors, markets and other places where the mission team intended to visit to make contact with the targets and informed and arrange a meeting for the mission team of Mr. Guy Faure. The meeting was ended around 2.30pm.

b. Success Achieved

A very interesting exchange took place between the HVIP project officials and staff and the mission team. A schedule of activities could be drawn and the Hadejia Valley Irrigation Project actively participated in facilitating the organization of the mission.

Besides, the aim of the mission was explained to the Hadejia Valley Irrigation Project.

c. Constraints Identified

The discussion with the HVIP staff reveals the following:

- The facilitators need a lot of intensive training
- The information system needs to be updated and derecop to suit Agency and farmer needs.
-

d. Action Plan Drawn And Recommendations.

Agency should clearly identify facilitators' training need.

Information system based on farmers & agency circumstance should be derecoped.

ii. Meeting with Gamsarka Farmers (4.30pm – 7.00pm)

a. Issue discussed

The mission team had a meeting with the farmers in the Gamsarka sector of the project. The meeting was like a congress meeting of the water users association of the sector. Some of the executives of the association and more than 50 association members were at the meeting. Mm. S.Z. Abubakar with the assistance of one HVIP project did the introduction staff. Mr. Guy Faure mission was clearly explained to the farmers. Questions ranging from production techniques, marketing, income received from farming, problems encountered in the dry and wet season farming and so on was discussed extensively. Also issues related to the farmers organizational and managerial abilities were raised and discussed. A questionnaire was designed to test the qualitative data collection from the selected target groups. The was considered desirable to enable meaningful interpretation of the quantitative data collected during conventional surveys. This technique would be applied in both HVIP and KRIP during the thematic and baseline surveys respectively. *Annex 4* provides the sample of the questionnaire.

b. Success Achieved

Through this meeting, a better understanding of the WUA productive and organizational abilities, problems and perspectives was captured.

From a methodological point of view, the meeting was also interesting. Indeed, the open discussion and interactions between the mission team and the farmers constituted one of the many available participative tools, permitting to handle a structured group discussion.

c. Constraints Identified

Farmers need more sensitization and organization to expand and enhance the maintenance of irrigation facilities of the project.

Lack of adequate funds is identified as a factor limiting farmers' performance as individuals and as the association.

d. Action Plan Drawn

Two farmers were selected for detailed interview with the mission leader Mr. Faure. The two farmers selected, one was a Fadama farmer and the other one an irrigation farmer with the project. The interview was schedule the following day at the farmers' field.

DAY FOUR: WEDNESDAY 20TH JUNE 2001

i. Farm Visit And Interview With The Two Selected Farmers From Gamsarka WUA

a. Issues Discussed

The purposes of these two interviews were:

- a. To get a better understanding on the articulation in the farming systems between upland, fadama and irrigation farming. Thus, it was expected to better understand the reasons for low cropping intensities in the Dry Seasons, and to find ways to cope with this problem;
- b. To test, modify and validate the questionnaire drawn for the future qualitative thematic survey (see annex 3);
- c. To give methodological elements on how to carry such open interviews.

Thus, the issues discussed were led by the draft questionnaire, and concerned mainly:

- Characteristics of the population
- Equipment and rearing
- Sole
- Access to the land
- Performances of the cropping systems
- The farmer's project
- Water management practices

b. Success achieved

On a methodological point of view, the questionnaire could be slightly modify, to better suit its objectives. Besides, it was possible to check the time necessary to carry out one interview (2'30'').

Concerning the understanding of the whole upland-fadama-irrigated system setting, the following highlights were given:

- a. There is a strong relationship between the three farming styles, the farmers often having land in at least two of the three areas.
- b. During the Wet Season, farmers usually decide to start planting in the Fadama area, because the water is not always available in the irrigation system (Hadejia Valley Irrigation Project do not release it on time)
- c. During the Dry Season, late harvesting of rice in the irrigation system makes the land unavailable for early planting, so that once more, farmers give the priority to Fadama farming.
- d. Fadama land is very demanded, and one can acquire it only through renting, meanwhile in the irrigated system, especially during the dry season, exchanges of land exist, to concentrate the production on easily irrigable land.
- e. In the fadama area, the productivity is higher than in the irrigation system. However, there is a higher risk factor in the fadama, due to unpredictability of the flood period, deepness... Besides, there are risks attached to the pump availability, maintenance, and its cost of operation.

c. Constraints identified

Yields in irrigated areas are lower than in the Fadama areas this was observed by all the farmers interviewed.

Lack of pumps, and scarcity and high cost of fuel are some of the major problems with Fadama farming.

Delay in water release by the agency sometimes causes delay in wet season operation.

d. Action Plan Drawn & Recommendation

The purposes of the thematic survey have been defined and it is suggested to carry it in two modules: A quantitative module to collect general information which can be compared with the results of the 1999 baseline survey results (see annex 4), to give a picture of the evolution of the irrigation system, A qualitative module to collect specific information and give highlights on the observed low cropping intensities through the analysis of the farming systems strategies in HVIP.

This thematic survey was proposed to be carried out in August-September 2001.

ii. Visit And Interview In Dakkasawa Market (2.00pm – 4.00pm)

a. Issues Discussed

The mission teams were in the market around 2.00pm and there was a tour around the market. After the short tour the market chief, who was earlier contacted before entering into the market, was located and a meeting was held. Mal. S.Z. Abubakar introduced Mr. Guy Faure to the market chief. The interview was conducted between Mr. Guy Faure and the market chief, who is also a trader in rice, vegetables. Questions related to marketing organization, price information, and strategies employed in buying and in selling, storage and transportation issues were discussed.

b. Success Achieved

The mission team was able to have an idea on the marketing organization, strategies and level of marketing information with the traders.

Mr. Guy Faure noted that the farmers and traders in HVIP may not be as integrated to the market as farmers and traders of KRIP in Kano.

c. Constraints Identified

Lack of price information to the farmers and traders.

Rice and vegetables traders are not yet organized into marketing cooperatives.

d. Action Plan Drawn

Detail study need to be conducted in order to study the problems and strategies of the traders especially those of vegetables.

e. Recommendations

The HVIP should developed price information within season and between various markets for subsequent dissemination to farmers and traders.

iv. Visit And Interviews With Gatafa Fadama Farmers (4.30pm – 6.00pm)

a. Issues Discussed

Various issues were discussed during the meeting. Fadama farming problems such as lack of enough water pumps, high cost of fuel and so on were identified. There were mere 30 fadama associations in the area but only are formally registered with the state ADP (JARDA). The farmers express their willingness to cultivate in the irrigation perimeter of the project, they therefore requested the HVIP to extend its perimeter to their land to enable them cultivate with ease in both the dry and wet season. The major crops grown include rice in the wet season and vegetables such as tomato and onion in the dry season.

b. Success Achieved

The discussion permitted to get a picture of the advantages and constraints that face the Fadama Users Association and the fadama farmers regarding both fadama farming and cultivation in the irrigation perimeter.

c. Constraints Identified

Farmers find it difficult to cultivate their Fadama fields because of lack of adequate water pumps, and high cost of fuel.

Farmers are not in a position to use the project facilities for wet and dry season activities because the project development is not yet within their area.

d. Action Plan Drawn And Recommendation

This meeting was to serve as a basis to understand fadama farmers association functioning, and the place of fadama farming into the broader HVIP settings. These elements will be taken into consideration in future interventions, especially in the definition of the FSP project.

DAY FIVE: THURSDAY 21ST JUNE 2001

i. Visit And Interview With Fishermen At Dingare Fishing Center

a. Issues Discussed

Various issues were discussed. Qualitative data such as the socio-economic characteristics of the fishermen were sought. The peak period of fishing activities in the area extend between 2 to 3 months and these periods coincided with the wet and dry season farming activities. Despite this some

of the fishermen still participate in wet and dry season farming activities, but usually as part-time farmers in that, they delegate other people to take care of the farming activities while they concentrate on their fishing. Most of the fishermen are ready to partake in dry and wet season farming if they could get support services at cheaper and affordable terms.

b. Success Achieved

It was realized that fishing activity in this area is not very much related to the low cropping intensity during the dry season in the project area, since most of the fishermen delegate other people to do the work for them.

Fishermen are ready to participate more even the project could assist them by providing land and support services.

c. Constraints Identified

Fishermen at the area complained about lack of land for cultivation. Their land was taken over by the project in the process of constructing the water barrage, which they now use for the fishing.

Fishermen also complained about the meager compensation (for land) given to them by the project and some were not yet compensated.

d. Action Plan Drawn And Recommendation

This meeting was to serve as a basis to understand fadama farmers association functioning, and the place of fishing activities into the broader HVIP settings. These elements will be taken into consideration in future interventions, especially in carrying out the thematic survey.

ii. Visit and meeting with pastoralist at Marina sector in HVIP

a. Issues Discussed

Issues discussed a group of 6 Fulani herders include amongst:

▪ **Rearing of cattle**

-Grazing points in dry season is the irrigated fields in HVIP

- Grazing points in wet season is outside the scheme in some fadamas of surrounding LGAs (M/Madori K/Kassamma etc.)

- Grazing land is restricted in the wet season and usually lead to conflict with farmers

- Cattle routes are continuously encroached by farmers becoming narrower leading to conflict even on transit

- No effort is being made to redraw the lost routes or even to stabilize the existing narrowing routes by either the authorities or by the communities or even

▪ **Economics and marketing of cattle and their products**

- Milk production and sales is traditionally for the women, the proceeds is for the woman and decide how to spend it

- Cattle ownership is nowadays mixed, both pastoralists and non-pastoralists are involved in cattle rearing
 - The Fulani sales his cattle only with a strong reason e.g. festival, marriage, crop production etc
 - Sales of cattle is also common to buy forage for the herd
 - An average of 2 cattle are sold per year to finance rice production with good yield in HVIP
 - More than 4 cattle are required to maintain the family and herd for a period of one year without farming
 - Sales of cattle is at local markets or at the settlement where the butchers go to buy at low price
 - No organized marketing of cattle by fulanis but by middle men who control not only the local but also the regional and even international market network
- Rain fed farming strategies
 - The Fulanis have no upland, or fadama lands but only irrigated fields in the HVIP scheme
 - Fully participate in rice farming in the scheme
 - The head of the family remain in HVIP to attend to his rice fields while the grown up male child take the herd to the grazing points until rice harvest
 - The herd and the grown up male child are usually under the protection of some settlers around the pasture on a mutual arrangement
 - Interested to expand the cultivation if they can get more land
 - Land fragmentation due to traditional inheritance is a limiting factor for expansion
 - Are ready to rent additional land for wet season if available
 - Irrigation farming strategies
 - Few Fulanis are involve in dry season farming activity
 - Expansion of land in dry season is not popular due to rearing of cattle
 - Majority of the land owners prefer to leave their land fallow in dry season mainly because they are part-time farmers outsiders
 - Are interested in pasture/ legumes cultivation for their cattle but lack the capital
 - They can not sale cattle to finance dry season because they can easily buy forage from other farmers

b. Success Achieved:

It was very clear to the mission team that the fulani cattle rearers have distinct strategies for cattle rearing as well as crop production for domestic and animal consumption. They also knew their limitations as it relates to their incomes from the cattle as well as from other competitive activities. They however agreed that some of their decisions are cultural and socially influenced not economic.

iii. Presentation and discussion of HVIP baseline survey results

The team leader farming system module (Mr. I.Y. Ilu) supported by some other members of his team presented the first draft of the baseline survey report. The mission team, HVIP management and WUA facilitators who participated in the conduct of the survey discussed the report. Below are highlights of the discussion.

a. Issues Discussed :

The draft report was presented to the participants and zone issues were discussed. Participants appreciated the position of the FS team members on the report because they did not generate the data for the analysis. However, the results were observed to be consistent with the reality on ground. The discussion was mainly on suggestion for the improvement of the report for better comprehension by all who may be interested in the report.

b. Success Achieved :

The team was able to present the report to the management of the HJRBDA and the CIRAD Mission team without any difficulty. It was able to convince all participants that the project has had an impact on the target farmers.

c. Constraints Identified

It was observed that some of the improvements that were suggested may be difficult to implement as data needed for such were not captured at the collection stage.

d. Action Plan

The team will make all necessary corrections as soon as possible on the draft report and send copies to collaborators for further comments.

e. Recommendations

The following recommendations were made:

- i. Enumerators should be trained on the questionnaire to be used for the Thematic and Baseline surveys of the HVIP and the KRIP respectively.
- ii. Quantitative and qualitative data should be separated.
- iii. The FS survey instruments should be improved.
- iv. There is need to emphasis more on economic data.

iv. Meeting with newly elected WUAs Federation Officials

a. Issues Discussed

Mr. Guy Faure led the discussion with the help of Mal. I. Y. Ilu and S.Z. Abubakar as translators. The meeting started with introduction of the mission team and the introduction of the federation officials. The federation officials present at the meeting were;

Arma Ya'u	-	Chairman WUA Federation
Abdullahi Ahmed	-	Secretary “ “
Abdullahi Alasan	-	PRO “ “
Idris Musa	-	Auditor “ “

Other officials who were not present;

i. Abdullahi Hassan	-	Treasurer WUA Federation
ii. Sale Ma'azu	-	Vice-Chairman WUA Federation
iii. Alh. Mohammed	-	Deputy Secretary
iv. Alh. Adam Yamidi	-	Ex – Officio
v. Alh. Ubale Auyo	-	Ex – Officio

The purpose of the meeting was:

1. to have some highlights on the WUA Federation creation, objectives and first achievements
2. to communicate and explain to the WUAs through their Federation the delay in the FSD project implementation, and the further development of this project.

b. Success Achieved

Two main issues were addressed:

- WUA Federation

At the origin of the creation of the WUA Federation, the different WUA came to realize that some of the difficulties they had to face in the course of their functioning were impossible to tackle, and that there was a need to scale up the farmer representation at the level of a WUA Federation. Thus, this Federation was created with the following objectives:

1. A better coordination in working together,
2. To overcome some difficulties such as Maintenance of the main canal, main drain
3. To serve as a negotiation platform in case of conflict resolution with any third party (LGA, HVIP Agency,...),
4. To be able to receive a uniform information from the Agency and to diffuse it to the WUA,
5. Improve the information flow.

The first achievements of the Federation was in supporting the two WUAs Ganuwar Kuka and Yamidi in discussing the issue of common maintenance. The two WUAs agreed to carry from now onwards the maintenance works together.

- **FSD Project**

It was explained to the WUA federation the administrative complications that delayed the FSD implementation and the delay in lodging the loan money in the WUAs bank accounts. Besides, it was emphasized that this money should imperatively be regarded and managed as a loan, and that the different stakeholders of the project will be supervising very cautiously the loan management and the revolving of the funds.

Finally, the new administrative arrangement, which involves the National Agricultural Extension and Research Liaison Service as an intermediary and key partner in the project, was presented.

The Federation members expressed their satisfaction in the new arrangement, undertook to spread out the information regarding the necessity to carefully manage the loan. They gave insurance of their willingness and their ability to do it and gave example of past success in managing revolving funds in some WUAs.

Finally, they requested to have access to the loan funds as soon as possible, since this money should serve for land preparation and fertilization during the current Wet Season. *Annex 5* provide details on the loan agreement and approved budget- an example of one WUA is provided.

c. Constraints Identified

The main constraint identified was the obstacles towards a quick availability of the FSD funds.

d. Action Plan Drawn And Recommendation

The Federation officials were encourage to develop their own ways of obtaining better services from the agency and other bodies.

The attention of the federation was drawn to carefully emphasize with each WUA the necessity to carefully manage the FSD loan.

Finally, an engagement was taken by the mission team to draw a legal agreement between NAERLS and every WUA for the FSD programme, according to the discussion (one out of the eight drawn agreements has been presented as an example in annex 5).

DAY SIX FRIDAY 22ND JUNE 2001

i. Meeting between HJRBDA Management and mission team

The mission held brief meeting with HJRBDA management where the MD Alh. Shehu Abdulkadir was personally in attendance. The project coordinator Mm. S.Z. Abubakar, briefed the meeting on the mission activities in both KRIP, HVIP and the target groups visited. He informed that the mission had successful interaction with all the target groups visited. The visit to the WUAs in KRIP and HVIP revealed that farmers are enthusiastic and willing to participate in the operation and maintenance of the irrigation schemes. The level of organization for the WUAs in the two schemes was clearly different with HVIP WUAs more advanced in KRIP. The KRIP WUAs are however more technically enlighten and skilled on both crop production practices and marketing strategies of their produce.

The mission visit to pastoralists and fishermen in HVIP explained some of the ideas regarding low cropping intensities during the dry season period. A lot of interesting information emerged pointing to the different strategies employed by the various groups in attaining the goals. Additionally, the vegetable marketers at Dakaiyawa market confirmed some of the reasons advanced by the WUAs and the pastoralist preventing them from cultivating comparatively larger area in the dry season in the HVIP scheme.

The co-ordinator also reported that the result of the baseline survey was presented and discussed by the mission team along side the HVIP management and field staff. Observations on how to improve the result were made and the farming system group is expected to incorporate these and produce an updated version for circulation amongst all stakeholders.

Other highlights given by the mission leader Mr. Guy Faure were on the farming system module activities, information system in HVIP and KRIP and other relevant information. The Managing Director of the HJRBDA promised to continue to support the program activities in both HVIP and KRIP and assured the mission that the authority is ready to maintain the lead on the promotion of PIM in Nigeria.

ii. Visit to cotton growing communities in Kano and Katsina States .

The Mission Team Visited The Two Selected Communities In Kano (Karye Lga) And Katsina States (Daudawa Lga) And Interacted With The Cotton Grower Organizations. *Annex 7* Provides the details on these activities.

DAY SEVEN: SATURDAY 23RD JUNE 2001

i. Wrap-up meeting with NAERLS Management

The mission team met the NAERLS management as scheduled. The details of the meeting are presented in *Annex 6*.

ii. Meeting on FSP PROJECT by Mission team

The mission continued with deliberation on the conceptualization and definition of the FSP project which seek to extent the present collaboration to other locations on different issues such as fadama farming upland Cotton and G/nut production. The mission leader noted the contributions of all members and promised to finalize the first draft for circulation amongst all relevant partners.

DAY EIGHT: SUNDAY 24th June 2001

i. Wrap-up Meeting by the mission team

The mission was concluded by remark form each of the collaborating partners through the project coordinators. The mission no doubt has open up new areas where the collaborative program can expand its activities. The key criteria agreed by all were potential locations for future interventions have to exhibits vibrate and active farmer organizations which are ready to support and participate in the activity of the program.

ii. Departure of Mr. Guy Faure

The mission saw the mission leader Mr. Guy Faure to the airport where he boarded his plane.

CONCLUSION

The presented outputs of this mission clearly show the very strong interactions existing between the different agricultural production system in HVIP. From the analysis of these interactions already raised some elements, which partly explain the low cropping intensities observed in HVIP. Boelens (Boelens, 1998) show that irrigation activities are embedded into a complex and broader techno-cultural, socio-economic and production context, and must be studied as such. The conclusions of the different meetings held during this mission pointed out the necessity to gain more knowledge on the socioeconomic and production settings, in order to support any intervention aimed at increasing production.

In this vein, the analysis of the HVIP baseline survey gave some good elements of analysis and knowledge of the HVIP as an irrigation scheme. However, the planned thematic survey will allow the farming system team to update the data collected and improve their analysis. Besides, the qualitative survey to be carried out in HVIP will also allow a thorough analysis of the different farming system strategies and sharpen the elements and indicators presented in this report.

Furthermore, the different meetings during this mission pointed out the lack of information and access to marketing opportunities for the different stakeholders. The Ph. D and M. Sc studies initiated in the frame of the collaborative programme as well as the development of the marketing module in the HVIP Information System are responding to this need of information.

Finally, it appeared clearly that a lack of capital (resource base) with the farmers hampers the increase of production and productivity. The FSD project, through the revolving loan provided by the French Embassy to the WUAs under the supervision of the NAERLS, will respond to this need. The mission team emphasized the necessity to carefully manage these funds, by involving the newly created WUA Federation for the good management of the funds.